PART XVIII The Digestive System

ZUHAIR ALMUSAWI
د. رسل زيد
د. ايمان نبيل محمد
د.ريما

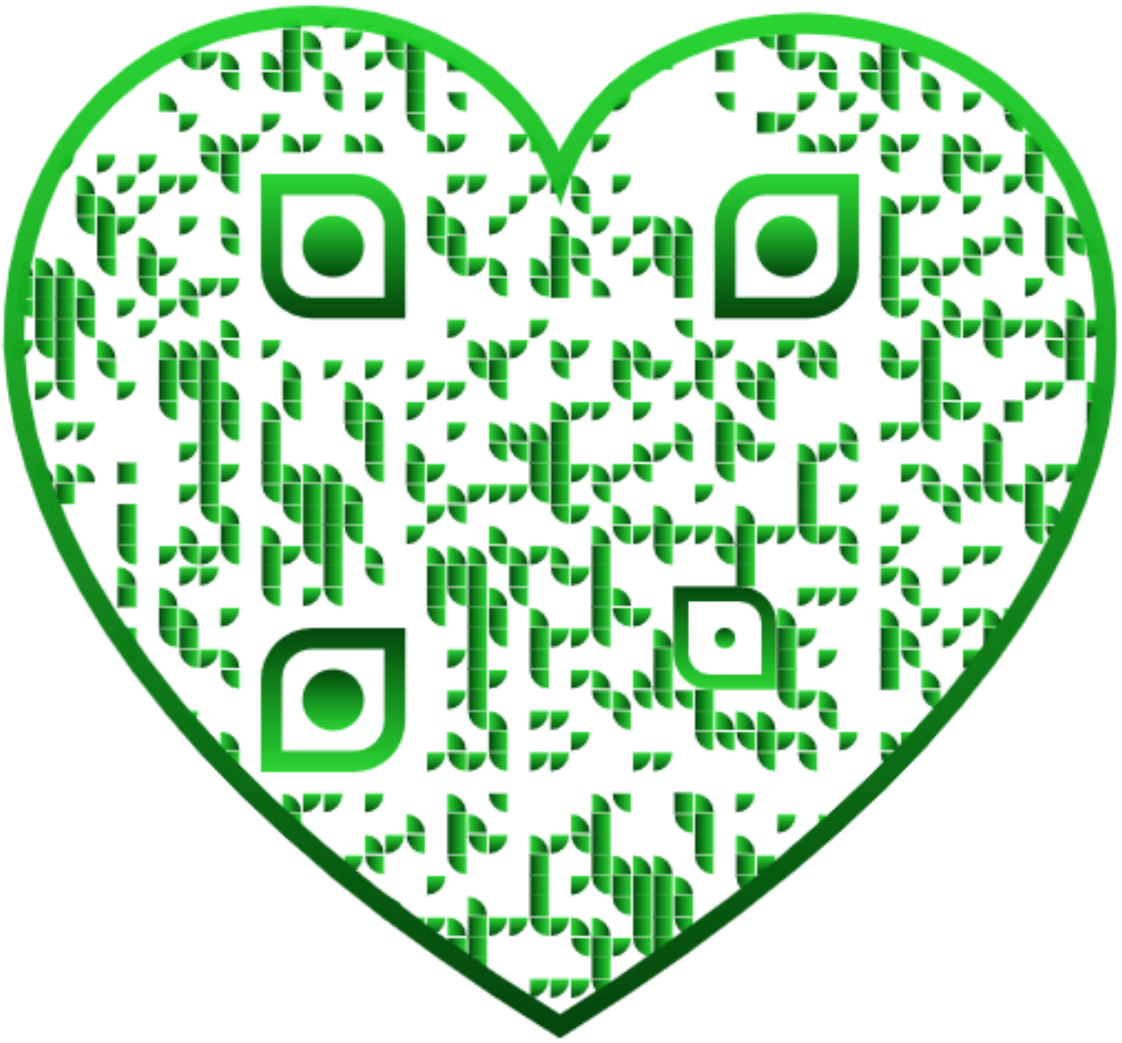
1. All the following are causes oropharyngeal dysphagia **EXCEPT**
   A. cerebral palsy
   B. esophagitis
   C. brain tumors
   D. cerebrovascular accidents
   E. hyperthyroidism

2. All the following are common causes of emesis in childhood **EXCEPT**
   A. gastroenteritis
   B. toxic ingestion
   C. pertussis syndrome
   D. peptic ulcer
   E. otitis media

3. Secretory diarrhea can be caused by
   A. neuroblastoma
   B. laxative abuse
   C. lactase deficiency
   D. irritable bowel syndrome
   E. thyrotoxicosis

4. All the following metabolic disorders can cause constipation **EXCEPT**
   A. hypercalcemia
   B. hyperkalemia
   C. hypothyroidism
   D. diabetes mellitus
   E. diabetes insipidus

5. All the following suggest a potentially serious organic etiology of abdominal pain **EXCEPT**
   A. age >5 yr
   B. fever
   C. flank pain
   D. awakening from sleep
   E. referred pain to shoulder



6. All the following are common causes of gastrointestinal bleeding in infancy **EXCEPT**
   A. bacterial enteritis
   B. intussusception
   C. Meckel diverticulum
   D. anal fissure
   E. lymphonodular hyperplasia

7. Delayed eruption of the primary teeth can be due to the following **EXCEPT**
   A. familial
   B. hypopituitarism
   C. hyperthyroidism
   D. cleidocranial dysplasia
   E. trisomy 21

8. All the following are features of Stickler syndrome **EXCEPT**
   A. prominent joints
   B. autosomal recessive inheritance
   C. hypotonia
   D. mitral valve prolapse
   E. retinal detachment

9. Periodontitis is often associated with the following conditions **EXCEPT**
   A. leukocyte adhesion defects
   B. hypophosphatasia
   C. leukemia
   D. vitamin D resistant rickets
   E. histiocytosis X

10. Aphthous-like lesions may be associated with the following conditions **EXCEPT**
   A. inflammatory bowel disease
   B. Behcet disease
   C. gluten-sensitive enteropathy
   D. SWEET syndrome
   E. herpetic gingivostomatitis

11. Eruption cyst over the erupting tooth is characterized by the following **EXCEPT**
   A. smooth
   B. painful
   C. blue or blue-black
   D. no treatment is indicated
   E. resolves after eruption of the tooth

12. All the following criteria must be met for the consensus definition of cyclical vomiting syndrome **EXCEPT**

A. at least 5 attacks in any interval
B. recurrent episodes of intense vomiting and nausea lasting 1 hr to 10 days and occurring at least 1 wk apart
C. vomiting during episodes occurs ≥4 times/hr for ≥1 hr
D. return to baseline health between episodes
E. usually attributed to another disorder

13. One of the following cause osmotic diarrhea

A. toxigenic Escherichiacoli
B. carcinoid
C. neuroblastoma
D. glucose-galactose malabsorption
E. congenital chloride diarrhea

14. Acute diarrhea in infancy is commonly caused by

A. primary disaccharidase deficiency
B. overfeeding
C. Hirschsprung toxic colitis
D. adrenogenital syndrome
E. neonatal opiate withdrawal

15. Advanced dentition for age and sex is seen in

A. nutritional disturbances
B. hypopituitarism
C. cleidocranial dysplasia
D. hyperthyroidism
E. trisomy 21

16. Mottled enamel (permanent teeth) may be seen in

A. renal failure
B. immunosuppression
C. neutrophil chemotactic deficiency
D. maternal infections
E. uncontrolled juvenile diabetes

17. Pierre Robin syndrome consists of the following **EXCEPT**

A. micrognathia
B. high arched palate
C. cleft palate
D. small tongue

E. foreshortened floor of the mouth

18. The following are features of achalasia **EXCEPT**

A. dysphagia for solids and liquids
B. may be accompanied by undernutrition
C. may be accompanied by chronic cough
D. may be misdiagnosed as asthma
E. usually diagnosed before school age

19. Contrast (usually barium) radiographic study of the esophagus and upper gastrointestinal tract has poor sensitivity and specificity in the diagnosis of

A. achalasia
B. esophageal strictures
C. GERD
D. hiatal hernia
E. gastric outlet obstruction

20. Gastroesophageal reflux disease (GERD) is the most common esophageal disorder in children of all ages.
Of the following, the **MOST** common symptom in infants is

A. excessive crying
B. regurgitation
C. failure to thrive
D. abnormal posturing
E. sleeping disturbances

21. The following procedures satisfactorily improve gastroesophageal reflux disease (GERD) symptoms in infants **EXCEPT**

A. modified feeding volumes
B. hydrolyzed infant formulas
C. prone position, when the infant is awake and observed
D. avoidance of smoke exposure
E. seated position

22. Erosive esophagitis is found in approximately 12% of children with gastroesophageal reflux disease (GERD) symptoms and is more common in the following **EXCEPT**

A. girls
B. older children
C. neurologically abnormal children
D. children with severe chronic respiratory disease
E. children with hiatal hernia

23. Hypertrophic pyloric stenosis has been associated with the following **EXCEPT**

A. eosinophilic gastroenteritis
B. Apert syndrome
C. Zellweger syndrome
D. trisomy 21
E. Cornelia de Lange syndrome

24. Oral and intravenous atropine sulfate (pyloric muscle relaxant) has been described when surgical treatment is not available for hypertrophic pyloric stenosis with a success rate of

A. 20%
B. 40%
C. 60%
D. 80%
E. 90%

25. Meckel diverticulum has been conveniently referred to by the "rule of 2s," which explains the classic presentation of this congenital anomaly. One of the following is **FALSE** in this rule

A. found in approximately 2% of the general population
B. usually located 2 feet proximal to the ileocecal valve
C. approximately 2 inches in length
D. contain 2 types of ectopic tissue (pancreatic or gastric)
E. found twice as commonly in males

26. Confirmation of a Meckel diverticulum can be difficult.
Of the following, the **MOST** sensitive study is

A. plain abdominal radiographs
B. barium studies
C. radionuclide technetium-99m scans
D. abdominal ultrasound
E. abdominal CT scan

27. Hirschsprung disease has been seen in association with the following **EXCEPT**

A. microcephaly
B. mental retardation
C. autism
D. cleft lip
E. hydrocephalus

28. In healthy full-term infants, meconium is passed within 48 hr of birth in

A. 99%

B. 90%
C. 80%
D. 70%
E. 60%

29. Ileus is the failure of intestinal peristalsis caused by loss of coordinated gut motility without evidence of mechanical obstruction. In children, ileus accompanies the following metabolic abnormalities **EXCEPT**

A. uremia
B. hypokalemia
C. hypocalcemia
D. hypermagnesemia
E. acidosis

30. The classic triad of intussusception, (pain, a palpable sausage-shaped abdominal mass, and bloody or currant jelly stool) is seen in

A. ≤20% of patients
B. ≤30% of patients
C. ≤40% of patients
D. ≤50% of patients
E. ≤60% of patients

31. Regarding foreign bodies in the stomach and intestine, all the following are true **EXCEPT**

A. coins are the most commonly ingested foreign body
B. perforation is estimated to be <1% of all objects ingested.
C. most objects pass though the intestine in 4-6 days
D. cathartics should be avoided
E. ingestion of batteries usually leads to problems

32. A bezoar is an accumulation of exogenous matter in the stomach or intestine. Regarding bezoar, all the following are true **EXCEPT**

A. trichobezoars are composed of the patient's own hair
B. lactobezoars can be attributed to the high casein or calcium content of some premature formulas.
C. phytobezoars are composed of a combination of plant and animal material
D. lactobezoars usually resolve when feedings are withheld for 24-48 hr
E. sunflower seed bezoars are reported to cause small bowel obstruction

33. The usual presenting symptoms of peptic ulcer disease in infants and younger children are the following **EXCEPT**

A. feeding difficulty

B. vomiting
C. epigastric pain
D. crying episodes
E. hematemesis

34. H. pylori are among the most common bacterial infections in humans.
All the following are true **EXCEPT**
A. H. pylori is a Gram-negative, S-shaped rod
B. H. pylori infection can manifest with abdominal pain or vomiting
C. H. pylori is classified by the World Health Organization as a group I carcinogen
D. If H. pylori is identified in a child with no symptoms, no therapy should be offered
E. H. pylori can be associated, though rarely, with chronic autoimmune thrombocytopenia

35. One of the following features is **MORE** common in ulcerative colitis than in Crohn disease
A. abdominal pain
B. growth failure
C. rectal bleeding
D. mouth ulceration
E. strictures

36. A neonate is presented with watery and voluminous stool which is mistaken for urine.
Of the following, the **MOST** likely cause is
A. congenital glucose-galactose malabsorption
B. microvillus inclusion disease
C. congenital bile acid malabsorption
D. congenital enterokinase deficiency
E. congenital trypsinogen deficiency

37. The **MOST** common extraintestinal manifestation of celiac disease is
A. osteoporosis
B. short stature
C. arthritis
D. iron-deficiency anemia
E. aphthous stomatitis

38. The following neurologic manifestations are seen in celiac disease **EXCEPT**
A. myopathy
B. epilepsy

C. irritability
D. cerebral calcifications
E. cerebellar ataxia

39. The following conditions can be associated with celiac disease **EXCEPT**
A. Williams syndrome
B. Down syndrome
C. Turner syndrome
D. Klinefilter syndrome
E. Sjogren syndrome

40. Abetalipoproteinemia is a rare autosomal recessive disorder of lipoprotein metabolism (Bassen-Kornzweig syndrome). It is characterized by the following **EXCEPT**
A. presence of acanthocytes in the peripheral blood smear
B. extremely low plasma levels of cholesterol
C. very low triglycerides level
D. absent deep tendon reflexes
E. normal intellectual development

41. The following infections may cause malabsorption in immunocompromised children **EXCEPT**
A. Shigella
B. Salmonella
C. enteropathogenic E. coli
D. Giardia
E. rotavirus

42. In infants and very young toddlers chronic diarrhea can appear following infectious enteritis. The pathogenesis of the diarrhea is not always clear and may be related to
A. food protein allergy
B. bacterial overgrowth
C. giardiasis
D. Strongyloides stercoralis
E. eosinophilic gastroenteropathy

43. Vitamin B12 and bile salts are only absorbed in
A. distal ileum
B. duodenum
C. proximal jejunum
D. colon
E. proximal ileum

44. Management of the diarrhea in chronically malnourished children is based on
A. intravenous therapy
B. standard osmolarity oral rehydration solutions
C. reduced osmolarity oral rehydration solutions
D. slow resumption of feeds
E. nothing by mouth for 24 hour

45. The **MOST** common congenital disorder associated with exocrine pancreatic insufficiency is
A. Shwachman- Diamond syndrome
B. Johanson-Blizzard syndrome
C. Pearson bone marrow syndrome
D. isolated pancreatic enzyme deficiency
E. cystic fibrosis

46. In the blue diaper syndrome, symptoms can include all the following **EXCEPT**
A. vomiting
B. diarrhea
C. failure to thrive
D. nephrocalcinosis
E. ocular abnormalities

47. Features of Tangier disease include the following **EXCEPT**
A. orange tonsils
B. hepatosplenomegaly
C. relapsing neuropathy
D. orange-brown spots on the colon and ileum
E. increased plasma cholesterol

48. Newborns with congenital chloride diarrhea present with severe life-threatening secretory diarrhea during the 1st few wk of life.
Of the following, the **MOST** common laboratory finding is
A. metabolic alkalosis
B. hyperchloremia
C. hyperkalemia
D. hypernatremia
E. hypercalcemia

49. Acrodermatitis enteropathica requires long term treatment with elemental zinc
A. 0.5 mg/kg/day
B. 1 mg/kg/day
C. 1.5mg/kg/day

D. 2 mg/kg/day
E. 2.5 mg/kg/day

50. Direct person-to-person contact outbreaks of gastroenteritis are usually caused by
A. Shigella
B. Salmonella
C. Rotavirus
D. Giardia
E. Clostridium difficile

51. Guillain-Barré syndrome can be a sequel in the following foodborne bacterial illness
A. Bacillus anthracis
B. Bacillus cereus
C. Brucella abortus
D. Campylobacter jejuni
E. Clostridium botulinum

52. Antibiotics are not indicated and may be detrimental in the following foodborne bacterial illness
A. Enterotoxigenic E. coli
B. Enterohemorrhagic Escherichia coli O157:H7
C. Campylobacter jejuni
D. Brucella abortus
E. Bacillus anthracis

53. The first-line treatment for children with Vibrio cholera is
A. azithromycin
B. ciprofloxacin
C. doxycycline
D. ampicillin
E. TMP-SMX

54. Appendicitis-like symptoms (diarrhea, vomiting, fever, and abdominal pain) may be seen in the following foodborne bacterial illness
A. Vibrio vulnificus
B. Yersinia enterocolitica
C. Shigella spp.
D. Staphylococcus aureus (preformed enterotoxin)
E. Listeria monocytogenes

55. Risks associated with severe dehydration that might necessitate intravenous resuscitation include

A. age < 9 mo
B. postmaturity
C. fever >38°C if 3-36 mo of age
D. secretary diarrhea
E. depressed level of consciousness

56. The low-osmolality World Health Organization (WHO) oral rehydration solution (ORS) has the following per liter **EXCEPT**
A. 75 mEq of sodium
B. 50 mEq of chloride
C. 20 mEq of potassium
D. 75 mmol of glucose
E. total osmolarity of 245 mOsm

57. Immunoglobulin A (IgA) nephropathy is an extraintestinal manifestation of the following enteric infection
A. Salmonella
B. Shigella
C. Yersinia
D. Campylobacter
E. Cryptosporidium

58. Continued enteral feeding in diarrhea aids in recovery from the episode, but the following should be avoided
A. rice
B. potatoes
C. lean meats
D. fruits
E. juices

59. Zinc supplementation in children with diarrhea in developing countries leads to the following **EXCEPT**
A. decreased use of ORS
B. reduced duration of diarrhea
C. reduced severity of diarrhea
D. reduced hospital admission
E. improving diarrhea recovery rates

60. Ondansetron is an effective and less-toxic antiemetic agent and can be given as a useful adjunct to the treatment of vomiting in ambulatory settings, it is usually given
A. intravenously
B. intramuscularly

C. subcutaneously
D. sublingually
E. orally

61. Nitazoxanide is an anti-infective agent effective in the treatment of a wide variety of pathogens including the following **EXCEPT**

A. Giardia lamblia
B. E. histolytica
C. Shigella
D. C. difficile
E. Rotavirus

62. Ciprofloxacin is the drug of choice for the treatment of

A. Salmonella
B. Shigella
C. Campylobacter jejuni
D. Clostridium difficile
E. Cyclospora spp.

63. Increased fecal calprotectin concentration is seen in

A. fat malabsorption
B. carbohydrate malabsorption
C. intestinal inflammation
D. pancreatic function
E. reduced intestinal surface

64. The following are alarm symptoms of functional abdominal pain **EXCEPT**

A. persistent left lower quadrant pain
B. unexplained fever
C. genitourinary tract symptoms
D. dysphagia
E. nocturnal diarrhea

65. A variety of laboratory tests have been used in the evaluation of children with suspected appendicitis.
Of the following, the **MOST** sensitive and specific one is

A. leukocyte count
B. urinalysis
C. electrolytes
D. C-reactive protein
E. serum amyloid A protein

66. Plain abdominal radiographs may be helpful in selected cases of abdominal pain/suspected appendicitis. Plain abdominal x-rays can demonstrate the following findings in acute appendicitis **EXCEPT**

A. sentinel loops of bowel and localized ileus
B. scoliosis from psoas muscle spasm
C. a colonic air–fluid level above the right iliac fossa
D. a RLQ soft-tissue mass
E. a calcified appendicolith (50% of cases)

67. Findings that suggest advanced appendicitis on ultrasound include the following **EXCEPT**

A. asymmetric wall thickening
B. increased local tenderness to compression
C. abscess formation
D. associated free intraperitoneal fluid
E. surrounding tissue edema

68. The clinical presentation of one of the following closely mimics appendicitis

A. Meckel diverticulitis
B. mesenteric adenitis
C. sickle cell disease
D. pancreatitis
E. ovarian torsion

69. There are many anomalies associated with anorectal malformations.
Of the following, the **MOST** common are

A. kidney anomalies
B. cardiac anomalies
C. esophageal atresia
D. spina bifida
E. tethered cord

70. The risk of colon cancer is 100% in the following condition

A. Peutz-Jeghers syndrome
B. Cowden syndrome
C. Gardner syndrome
D. Juvenile polyposis
E. Bannayan-Riley- Ruvalcaba syndrome

71. Hamartomatous polyps, which represent the most common intestinal tumors of childhood have the following features **EXCEPT**

A. occurring in 1-2% of children

B. present in the 1st decade
C. most often at ages 2-5 yr
D. most commonly in the colon
E. often multiple

72. Inguinal hernias are one of the most common conditions seen in pediatric practice and the most common surgical procedure performed in pediatric surgical practice. Regarding the incidence of congenital indirect inguinal hernia, all the following are true **EXCEPT**

A. approaches 30% in very-low birth weight infants
B. more common in boys
C. approximately 60% of inguinal hernias occur on the right side
D. bilateral hernias is higher in boys
E. an increased incidence in twins

73. The features of the Johanson-Blizzard syndrome include the following **EXCEPT**

A. exocrine pancreatic deficiency
B. hypoplasia of the alae nasi
C. congenital deafness
D. hyperthyroidism
E. ectodermal scalp defects

74. The test of choice for acute pancreatitis is

A. serum amylase
B. serum lipase
C. hyperglycemia
D. hypocalcemia
E. elevated γ-glutamyl transpeptidase

75. The first choice for diagnosis of pancreatic pseudocysts is

A. transabdominal ultrasonography
B. CT scanning
C. magnetic resonance cholangiopancreatography
D. endoscopic retrograde cholangiopancreatography
E. endoscopic ultrasound

76. Stippled calcifications of the patellas and greater trochanter are found in the following intrahepatic cholestasis

A. idiopathic neonatal hepatitis
B. Aagenaes syndrome
C. Zellweger (cerebrohepatorenal) syndrome
D. neonatal iron storage disease

E. Byler disease

77. One of the following rules out biliary atresia
A. history of prematurity
B. normal size of liver
C. normal consistency of liver
D. consistently pigmented stools
E. no familial incidence

78. The success rate for establishing good bile flow after the Kasai operation is much higher (90%) if performed before
A. 4 wk of life
B. 6 wk of life
C. 8 wk of life
D. 10 wk of life
E. 12 wk of life

79. For patients with advanced liver disease, hepatic transplantation has a success rate >85%. If the operation is technically feasible, it will prolong life and might correct the metabolic error in diseases such as
A. tyrosinemia
B. galactosemia
C. hereditary fructose intolerance
D. Zellweger syndrome
E. Crigler-Najjar

80. Persistence of unconjugated hyperbilirubinemia at levels >20 mg/dL after the 1st wk of life in the absence of hemolysis should suggest
A. galactosemia
B. tyrosinemia
C. α1-Antitrypsin deficiency
D. Crigler-Najjar type I
E. Maple serum urine disease

81. Liver histology demonstrates normal architecture, but hepatocytes contain black pigment similar to melanin in
A. Dubin-Johnson syndrome
B. Rotor syndrome
C. Gilbert syndrome
D. Crigler-Najjar syndrome
E. Zellweger syndrome

82. Kayser-Fleischer (K-F) ring is a brown discoloration at the outer margin of the cornea; the following are true **EXCEPT**

A. might not be present in younger children
B. requires a slit-lamp examination
C. is permenant even after trearment
D. is present in 95% of patients with neurologic symptoms
E. is deposition of copper in Descemet's membrane

83. A major attempt in Wilson disease should be made to restrict dietary copper intake to <1 mg/day.
Of the following, the food that should be avoided is

A. liver
B. meat
C. egg
D. chicken
E. fish

84. Neonatal iron storage disease (NISD), also known as neonatal hemochromatosis is a rapidly fatal, progressive illness characterized by the following **EXCEPT**

A. hypoprothrombinemia
B. hypoalbuminemia
C. hyperferritinemia
D. hyperbilirubinemia
E. hyperglycemia

85. No parenteral transmission occur in the following hepatotropic viruses

A. HAV
B. HBV
C. HCV
D. HDV
E. HEV

86. HBV is present in high concentrations in

A. serous exudates
B. saliva
C. vaginal fluid
D. semen
E. urine

87. Risk factors for HBV infection in children and adolescents include acquisition by the following **EXCEPT**

A. intravenous drug

B. contaminated needles
C. sexual contact
D. intimate contact with carriers
E. sharing toys

88. Regarding epidemiology of HBV, the following are true **EXCEPT**
A. intrauterine infection occurs in 2.5%
B. antigenemia appear 1-3 mo after birth
C. HBsAg is inconsistently recovered in human milk of infected mothers
D. breastfeeding of nonimmunized infants by infected mothers confer a greater risk of hepatitis
E. HBV has 8 genotypes (A-H)

89. Routine screening for HBV infection requires assay of multiple serologic markers, all the following are true **EXCEPT**
A. HBsAg is the first serologic marker of infection to appear
B. Anti-HBc is a valuable serologic marker of acute HBV infection
C. anti-HBs and anti- HBc are detected in persons immunized with hepatitis B vaccine
D. HBeAg is a marker of infectivity
E. HBsAg levels fall before symptoms wane

90. HBV is usually spread by
A. breastfeeding
B. kissing
C. hugging
D. sharing utensils
E. sharing needles

91. The **MOST** common hepatobiliary disease associated with inflammatory bowel disease (IBD) is
A. hepatic abscess
B. portal vein thrombosis
C. sclerosing cholangitis
D. autoimmune hepatitis
E. biliary carcinoma

92. Total parenteral nutrition (TPN) can cause a variety of liver diseases.
Of the following, the **MOST** severe complication is
A. hepatic steatosis
B. gallbladder damage
C. bile duct damage

D. cholestasis
E. sclerosing cholangitis

93. Autoimmune hepatitis is a clinical diagnosis based on certain diagnostic criteria; no single test will make this diagnosis. Important positive features include the following **EXCEPT**

A. female gender
B. primary elevation in alkaline phosphatase
C. elevated γ-globulin levels
D. presence of autoantibodies
E. characteristic histologic findings

94. The gallbladder is congenitally absent in approximately 0.1% of the population. Hypoplasia or absence of the gallbladder can be associated with

A. biliary dyskinesia
B. cystic fibrosis
C. cirrhosis
D. cholestasis
E. Wilson disease

95. Biliary sludge or cholelithiasis can be detected in >40% of children who are treated with prolonged course of

A. cefotaxime
B. meropenem
C. vancomycin
D. erythromycin
E. ceftriaxone

96. The **MOST** common presentation of portal hypertension is

A. jaundice
B. splenomegaly
C. esophageal hemorrhage
D. ascites
E. dilated cutaneous collateral vessels in the periumbilical region

97. The **MOST** common indication for liver transplantation in children is

A. Alagille syndrome
B. congenital hepatic fibrosis
C. hepatocellular carcinoma
D. biliary atresia
E. Wilson disease

98. Ascites is the pathologic accumulation of fluid within the peritoneal cavity.
Of the following, the **MOST** common cause in children is

A. neoplasia
B. hepatic
C. cardiac
D. trauma
E. infection

99. Primary peritonitis usually refers to bacterial infection of the peritoneal cavity without a demonstrable intraabdominal source.
Of the following, the **MOST** common isolated bacteria are

A. group A streptococci
B. Staphylococci
C. Escherichia coli
D. Mycobacterium tuberculosis
E. Pneumococci

100. Acute secondary peritonitis most often results from entry of enteric bacteria into the peritoneal cavity through a necrotic defect in the wall of the intestines or other viscus.
It **MOST** commonly follows

A. perforation of the appendix
B. rupture of a Meckel diverticulum
C. intussusception
D. peptic ulceration
E. necrotizing enterocolitis

د. رسل زيد
د. ايمان نبيل محمد
د.ريما

PART XVIII The Digestive System
ANSWERS
ZUHAIR ALMUSAWI

1.**(B)**. Esophagitis is a cause of esophageal dysphagia.
2.**(D)**. Peptic ulcer is a rare cause of emesis in childhood.
3**.(A)**. Laxative abuse and lactase deficiency are causes of osmotic diarrhea while irritable bowel syndrome and thyrotoxicosis are caused by increased bowel motility.
4.**(B)**. Hypokalemia causes constipation.
5.**(A)**. Age less than 5 year may suggest serious organic etiology.
6.**(C)**. Meckel diverticulum is a rare cause.
7.**(C)**. Hypothyroidism is a cause of delayed eruption.
8.**(B)**. Stickler syndrome, an autosomal dominant condition that includes other findings such as prominent joints, arthritis, hypotonia, hyperextensible joints, mitral valve prolapse, and ocular problems (retinal detachment, myopia, cataracts).
9.**(D)**. Periodontitis in children before puberty is a rare disease that often begins between the time of eruption of the primary teeth and the age of 4 or 5 yr. The disease occurs in localized and generalized forms. There is rapid bone loss, often leading to premature loss of primary teeth. It is often associated with systemic problems, including neutropenia, leukocyte adhesion or migration defects, hypophosphatasia, Papillon-Lefvre syndrome, leukemia, and histiocytosis X.
10.**(E)**. The aphthous ulcer (canker sore) is a distinct oral lesion, prone to recurrence. Aphthous ulcers are reported to develop in 20% of the population. Their etiology is unclear, but allergic or immunologic reactions, emotional stress, genetics, and injury to the soft tissues in the mouth have been implicated. Aphthous-like lesions may be associated with inflammatory bowel disease, Behcet disease, gluten-sensitive enteropathy, periodic fever-aphthae-pharyngitis-adenitis syndrome, Sweet syndrome, HIV infection (especially if ulcers are large and slow to heal), and cyclic neutropenia. Clinically, these ulcers are characterized by well-circumscribed, ulcerative lesions with a white necrotic base surrounded by a red halo.
11.**(B)**. Eruption cyst is a smooth, painless swelling over the erupting tooth.
12.**(E).** Not attributed to another disorder.
13.**(D).** Lactase deficiency, glucose-galactose malabsorption,lactulose, and laxative abuse are causes of osmotic diarrhea.
14.**(B)**. Rare causes of acute diarrhea in infancy include

- Primary disaccharidase deficiency
- Hirschsprung toxic colitis
- Adrenogenital syndrome
- Neonatal opiate withdrawal

15.**(D)**. Delayed eruption of the 20 primary teeth can be familial or indicate systemic or nutritional disturbances such as hypopituitarism, hypothyroidism, cleidocranial dysplasia, trisomy 21, and multiple syndromes.
16.**(A)**. Mottled enamel (permanent teeth) is seen in kidney failure and cystic fibrosis.
17.**(D)**. The tongue is usually of normal size, but the floor of the mouth is foreshortened. The air passages can become obstructed, particularly on inspiration, usually requiring treatment to prevent suffocation.
18.**(E)**. It is uncommon before school age.
19.**(C)**. Contrast (usually barium) radiographic study of the esophagus and upper gastrointestinal tract is performed in children with vomiting and dysphagia to evaluate for achalasia, esophageal strictures and stenosis, hiatal hernia, and gastric outlet or intestinal obstruction. It has poor sensitivity and specificity in the diagnosis of GERD.
20.**(B)**. Infantile refluxmanifests more often with regurgitation(especially postprandially), signs of esophagitis (irritability, arching, choking, gagging, feeding aversion), and resulting failure to thrive; symptoms resolve spontaneously in the majority of infants by 12-24 mo.
21.**(E)**. Seated position worsens infant reflux and should be avoided in infants with GERD.
22.**(A)**. More common in boys.
23.**(D)**. Trisomy 18.
24.**(D)**.
25.**(E)**. Meckel diverticulum is found twice as commonly in females.
26.**(C)**. The most sensitive study is a Meckel radionuclide scan, which is performed after intravenous infusion of technetium-99m pertechnetate. The mucus-secreting cells of the ectopic gastric mucosa take up pertechnetate, permitting visualizationof the Meckel diverticulum. The uptake can be enhancedwith various agents, including cimetidine, ranitidine, glucagon, and pentagastrin. The sensitivity of the enhanced scan is approximately 85%, with a specificity of approximately 95%. A false-negative scan may be seen in anemic patients; although false-positive results are uncommon, they have been reported with intussusception, appendicitis, duplication cysts, arteriovenous malformations, and tumors.
27.**(D)**. Cleft palate
28.**(A)**. In 99% of healthy full-term infants, meconium is passed within 48 hr of birth.
29.**(C)**. In children, it is most often associated with abdominal surgery or infection (gastroenteritis, pneumonia, peritonitis). Ileus also accompanies metabolic abnormalities (e.g., uremia, hypokalemia, hypercalcemia, hypermagnesemia, and acidosis) or administration of certain drugs, such as opiates, vincristine, and antimotility agents such as loperamide when used during gastroenteritis.
30.**(B)**. The classic triad of pain, a palpable sausage-shapedabdominal mass, and bloody or currant jelly stool is seen in <30% of patients with intussusception.
31.**(E)**. Ingestion of batteries rarely leads to problems, but symptoms can arise from leakage of alkali or heavy metal (mercury) from battery degradation in the

gastrointestinal tract. Batteries can also generate electrical current and thereby cause low-voltage electrical burns to the intestine.

32.**(E)**. Sunflower seed bezoars are reported to cause rectal pain and constipation as a result of the seed shells being associated with fecal impaction. Endoscopic removal is indicated, as these bezoars are refractory to enema or lavage management.

33.**(C)**. School-age children and adolescents more commonly present with epigastric pain and nausea, presentations generally seen in adults.

34.**(D)**. If H. pylori is identified, even in a child with no symptoms, eradication therapy should be offered

35.**(C)**. Rectal bleeding, diarrhea, mucus, pus, rectal involvement, toxic megacolon, sclerosing cholangitis, and crypt abscesses are more common in ulcerative colitis.

36.**(B)**. In secretory diarrhea caused by disorders such as congenital chloride diarrhea and microvillus inclusion disease, the stool is watery and voluminous and can be mistaken for urine.

37.**(D)**. The most common extraintestinal manifestation of celiac disease is iron-deficiency anemia, unresponsive to iron therapy. Osteoporosis may be present; in contrast to the situation in adults, it can be reversed by a gluten-free diet, with restoration of normal peak bone densitometric values. Other extraintestinal manifestations include short stature, arthritis and arthralgia, epilepsy with bilateral occipital calcifications,peripheral neuropathies, cardiomyopathy, isolated hypertransaminasemia, dental enamel hypoplasia, aphthous stomatitis, and alopecia.

38.**(A)**. Peripheral neuropathy.

39.**(D)**. Some diseases, many with an autoimmune pathogenesis, are found with a higher-than-normal incidence in celiac disease patients. Among these are type 1 diabetes, autoimmune thyroid disease, Addison disease, Sj◌̄gren syndrome, autoimmune cholangitis, autoimmune hepatitis, primary biliary cirrhosis. Such associations have been interpreted as a consequence of the sharing of identical HLA haplotypes. The relation between celiac disease and other autoimmune diseases is poorly defined; once those diseases are established, they are not influenced by a gluten-free diet. Other associated conditions include selective IgA deficiency and Down, Turner, and Williams syndromes.

40.**(E)**. Intellectual development tends to be slow.

41.**(C)**. Malabsorption is mainly seen after infection with Campylobacter, Shigella, Salmonella, Giardia, cryptosporidium, coccidioidosis, and rotavirus. These infectious causes of malabsorption are more common in immunocompromisedchildren.

42.**(A)**. The pathogenesis of the diarrhea is not always clear and may be related to secondary lactase deficiency, food protein allergy, antibiotic-associated colitis (including pseudomembranous colitis caused by *Clostridiumdifficile* toxin), or a combination of these.

43.**(A)**. Vitamin B12 and bile salts are only absorbed in the distal ileum.

44.**(C)**. Management of the diarrhea in chronically malnourished children is based on 3 principles: oral rehydration to correct dehydration, rapid resumption of feeds with avoidance of periods of nothing by mouth, and treating the etiology of the diarrhea.
45.**(E)**. Cystic fibrosis is the most common congenital disorder associated with exocrine pancreatic insufficiency.
46.**(B)**. Symptoms can include digestive disturbances such as vomiting, constipation, poor appetite, failure to thrive, hypercalcemia, nephrocalcinosis, fever, irritability, and ocular abnormalities.
47.**(E)**. Features of Tangier disease include orange tonsils, hepatosplenomegaly, relapsing neuropathy, orange-brown spots on the colon and ileum, diarrhea in association with decreased plasma cholesterol levels (apolipoprotein A-I and A-II), and normal or elevated triglyceride levels. Specific therapy for Tangier disease has not yet been established.
48.**(A)**. Laboratory findings are metabolic alkalosis, hypochloremia, hypokalemia, and hyponatremia (with high plasma renin and aldosterone activities).
49.**(B)**. Acrodermatitis enteropathica requires long term treatment with elemental zinc 1 mg/kg/day.
50.**(A)**. Direct person-to-person contact outbreaks of gastroenteritis are usually caused by norovirus and Shigella species. Unknown agents are seen in 30-40%; other pathogens include Salmonella, rotavirus, Giardia, Cryptosporidium, Clostridium difficile, and C. jejuni.
51.**(D)**. Treatment of Campylobacter jejuni is supportive care.For severe cases, antibiotics, such as azithromycin and quinolones, may be indicated early in the diarrheal diseaseGuillain-Barré syndrome can be a sequel.
52.**(B)**. Treatment of Enterohemorrhagic Escherichia coli(EHEC) E. coli O157:H7 include supportive care, monitor renalfunction, hemoglobin, and platelets closely. E. coli O157:H7infection is also associated with hemolytic uremic syndrome(HUS), which can cause lifelong complications. Studies indicate that antibiotics might promote the development of HUS. Antidiarrheal agents like Imodium may also increase the risk of developing HUS.
53.**(A)**. Treatment of Vibrio cholerae is supportive care with aggressive oral and intravenous rehydration.Doxycycline is recommended as first-line treatment for adults, whereas azithromycin is recommended as first-line treatment for children and pregnant women. Ciprofloxacin and doxycycline recommended as second-line drugs for children.
54.**(B)**. Signs and symptoms of Yersinia enterocolitica and Yersinia pseudotuberculosis are, appendicitis-like symptoms (diarrhea and vomiting, fever, abdominal pain) occur primarily in older children and young adults; might have a scarlatiniform rash or erythema nodosum with Y.Pseudotuberculosis.
55.**(E).** Risks associated with severe dehydration that might necessitate intravenous resuscitation include: age <6 mo; prematurity; chronic illness; fever >38°C (100.4°F) if

younger than 3 mo or >39°C (102.2°F) if 3-36 mo of age; bloody diarrhea; persistent emesis; poor urine output; sunken eyes;and a depressed level of consciousness.

56.**(B).** The low-osmolality World Health Organization (WHO) oral rehydration solution (ORS) containing 75 mEq of sodium, 64 mEq of chloride, 20 mEq of potassium, and 75 mmol of glucose per liter, with total osmolarity of 245 mOsm/L, isnow the global standard of care and more effective than home fluids, including decarbonated soda beverages, fruit juices, and tea. These are not suitable for rehydration or maintenance therapy because they have inappropriately high osmolalities and low sodium concentrations.

57.**(D)**. Characterized by recurrent episodes of blood in the urine, this condition results from deposits of the protein IgA in the glomeruli. IgA nephropathy can progress for years with no noticeable symptoms. Men seem more likely to develop this disorder than women.

58.**(E)**. Fatty foods or foods high in simple sugars (juices, carbonated sodas) should be avoided.

59.**(A)**. Administration of zinc in community settings leads to increased use of ORS and reduction in the inappropriate use of antimicrobials.

60.**(D)**. Because persistent vomiting can limit oral rehydration therapy, a single sublingual dose of an oral dissolvable tablet of ondansetron (4 mg 4-11 yr and 8 mg for children older than 11 yr [generally 0.2 mg/kg]) may be given.

61.**(C)**. Nitazoxanide, an antiinfective agent, is effective in the treatment of a wide variety of pathogens, including C. parvum, G. lamblia, E. histolytica, Blastocystis hominis, C. difficile, and rotavirus.

62.**(B).** The drug of choice for shigella is Ciprofloxacin, ampicillin, ceftriaxone, azithromycin, or TMP-SMX.

63.**(C)**. Abnormalities in the digestive–absorptive function tests suggest small bowel involvement, whereas intestinal inflammation, as demonstrated by increased fecal calprotectin or lactoferrin, supports colitis.

64.**(A)**. Pain that wakes up the child from sleep, persistent right upper or right lower quadrant pain.

65.**(E)**. Serum amyloid A protein is consistently elevated in patients with acute appendicitis with a sensitivity and specificity of 86% and 83%, respectively.

66.**(E)**. A calcified appendicolith (5-10% of cases),

67.**(B)**. Decreased local tenderness to compression.

68.**(A)**. Meckel diverticulitis is an infrequent condition, butthe clinical presentation closely mimics appendicitis and the diagnosis is usually made at surgery.

69.**(A)**. There are many anomalies associated with anorectal malformations. The most common are anomalies of the kidneys and urinary tract in conjunction with abnormalities of the sacrum. This complex is often referred to as the caudal regression syndrome.

70.**(C)**. 100% in Familial adenomatous polyposis (FAP) and Gardner syndrome.

71.**(E)**. Polyps may be found anywhere in the gastrointestinal (GI) tract, most commonly in the colon or rectum; they are often solitary but may be multiple.
72.**(D)**. The incidence of bilateral hernias is higher in girls and appears to be 20-40%.
73.**(D)**. The features of the Johanson-Blizzard syndrome include exocrine pancreatic deficiency, aplasia or hypoplasia of the alae nasi, congenital deafness, hypothyroidism, developmental delay, short stature, ectodermal scalp defects, and absence of permanent teeth, urogenital malformations, and imperforate anus.
74.**(B)**. Serum lipase is now considered the test of choice for acute pancreatitis as it is more specific than amylase for acute inflammatory pancreatic disease and should be determinedwhen pancreatitis is suspected.
75.**(A)**. Because of its ease, availability, and reliability, ultrasonography is the first choice.
76.**(C)**. Affected infants have severe, generalized hypotonia and markedly impaired neurologic function with psychomotor retardation. Patients have an abnormal head shape and unusual facies, hepatomegaly, renal cortical cysts, stippled calcifications of the patellas and greater trochanter, and ocular abnormalities.
77.**(D)**. Consistently pigmented stools rule against biliary atresia. The finding of bile-stained fluid on duodenal intubation also excludes biliary atresia.
78.**(C)**. The success rate for establishing good bile flowafter the Kasai operation is much higher (90%) if performed before 8 wk of life. Therefore, early referral and prompt evaluation of infants with suspected biliary atresia is important.
79.**(A).** It will prolong life and might correct the metabolic error in diseases such as α1-antitrypsin deficiency, tyrosinemia, and Wilson disease.
80.**(D)**. The diagnosis of CN type I is based on the early age of onset and the extreme level of bilirubin elevation in the absence of hemolysis. In the bile, bilirubin concentration is <10 mg/dL compared with normal concentrations of 50-100 mg/dL; there is no bilirubin glucuronide. Definitive diagnosis is established by measuring hepatic glucuronyl transferaseactivity in a liver specimen obtained by a closed biopsy.
81.**(A)**. Liver histology demonstrates normal architecture, but hepatocytes contain black pigment similar to melanin. Liver function is normal and prognosis is excellent. The most commonly reported symptoms are abdominal pain and fatigue, jaundice, dark urine, and slight enlargement of the liver. Jaundice fluctuates in intensity and is aggravated by intercurrent disease.
82.**(C)**. After adequate treatment, Kayser-Fleischer rings resolve.
83.**(A)**. A major attempt should be made to restrict dietary copper intake to <1 mg/day. Foods such as liver, shellfish, nuts, and chocolate should be avoided.
84.**(E)**. NISD is a rapidly fatal, progressive illness characterized by hepatomegaly, hypoglycemia, hypoprothrombinemia, hypoalbuminemia, hyperferritinemia, and hyperbilirubinemia. The coagulopathy is refractory to therapy with vitamin K. Liver pathology demonstrates severe liver injury with acute and chronic inflammation, fibrosis, and cirrhosis.
85.**(E).** Rare in HAV, common in HBV, HCV, and HDV, never in HEV.

86.**(A).** HBV is present in high concentrations in blood, serum, and serous exudates and in moderate concentrations in saliva, vaginal fluid, and semen.
87.**(E)**. HBV is not thought to be transmitted via indirect exposure, such as sharing toys.
88.**(D).** Breastfeeding of nonimmunized infants by infected mothers does not confer a greater risk of hepatitis than does formula feeding.
89.**(C)**. Only anti-HBs is present in persons immunized with hepatitis B vaccine, whereas both anti-HBs and anti- HBc are detected in persons with resolved infection.
90.**(E)**. HBV is not spread by breastfeeding, kissing, hugging, orsharing water or utensils.
91.**(C)**. Sclerosing cholangitis is the most common hepatobiliary disease associated with IBD, occurring in 2-8% of adult patients with ulcerative colitis and less often in Crohn disease.
92.**(D)**. Cholestasis is the most severe complication and can lead to progressive fibrosis and cirrhosis. It is the major factor limiting effective long-term use of TPN in children and adults. Risk factors for TPN-associated cholestasis include prolonged duration of TPN, prematurity, low birthweight, sepsis, necrotizing enterocolitis, and short bowel syndrome.
93.**(B)**. Primary elevation in transaminases and not alkaline phosphatase.
94.**(B)**. Hypoplasia or absence of the gallbladder can be associated with extrahepatic biliary atresia or cystic fibrosis.
95.**(E).** Prolonged use of high-dose ceftriaxone, a third-generation cephalosporin, has been associated with the formation of calcium-ceftriaxone salt precipitates (biliary pseudolithiasis) in the gallbladder. Biliary sludge or cholelithiasis can be detected in >40% of children who are treated with ceftriaxone for at least 10 days. In rare cases, children become jaundiced and develop abdominal pain; precipitates usually resolve spontaneously within several months after discontinuation of the drug.
96.**(C)**. Bleeding from esophageal varices is the most common presentation. Splenomegaly, sometimes with hypersplenism, is the next most common presenting feature in portal vein obstruction and may be discovered first on routine physical examination.
97.**(D)**. Biliary atresia is the most common indication for liver transplantation in children, followed by metabolic and inborn disorders, autoimmune and familial cholestatic disorders, and acute hepatic necrosis.
98.**(B)**. In children, hepatic and renal diseases are the most common causes.
99.**(E).** Pneumococci (most common), group A streptococci, enterococci, staphylococci, and Gram-negative enteric bacteria, especially Escherichia coli and Klebsiella pneumoniae, are most commonly found. Mycobacterium tuberculosis, Neisseria meningitidis, and Mycobacterium bovis are rare causes.
100.**(A)**. It most commonly follows perforation of the appendix. Other causes include incarcerated hernias, rupture of a Meckel diverticulum, midgut volvulus, intussusception, hemolytic uremic syndrome, peptic ulceration, inflammatory bowel disease, necrotizing cholecystitis, necrotizing enterocolitis, typhlitis, and traumatic perforation.